

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-4, 6-8, 11-15, and 17-23 are pending in this case. Claims 1-3, 6, 13-15, and 17-23 are amended by the present amendment. As amended Claims 1-3, 6, 13-15, and 17-23 are supported by the original specification,¹ new matter is added.

In the outstanding Official Action, Claims 2-4, 14, 18, and 22 were rejected under 35 U.S.C. §112, second paragraph. Claims 13, 14, and 17-19 were rejected under 35 U.S.C. §103(a) as unpatentable over Ito et al. (JP 11-153765, hereinafter “Ito”) in view of Ozaki et al. (U.S. Patent No. 6,353,455, hereinafter “Ozaki”) and Ueda (JP 2001-117033). Claims 1-4, 6-8, 15, and 20-23 were rejected under 35 U.S.C. §103(a) as unpatentable over Ito, Ozaki, and Ueda and further in view of Takahashi et al. (U.S. Patent No. 6,493,010, hereinafter “Takahashi”). Claims 11 and 12 were rejected under 35 U.S.C. §103(a) as unpatentable over Ito, Ozaki, Ueda, and Takahashi and further in view of Murayama et al. (U.S. Patent No. 4,847,642, hereinafter “Murayama”).

With regard to the rejection of Claims 2-4, 14, 18, and 22 under 35 U.S.C. §112, second paragraph, Claims 2, 14, and 22 are amended to replace “a direction of the second axis” with “the sub-scanning correspondence direction.” With regard to Claim 18, it is respectfully submitted that the recitation of “a CCD camera configured to record image data at a time based on output signals of the plurality of photodetectors” is definite and does not require that the CCD camera be the same as the photodetectors. An exemplary embodiment of an apparatus that can be used to practice the method recited in Claim 18 is shown in Figure 12 of the present application, where CCD camera 105 is configured to record image data at a time based on output signals of the three position detectors PD1, PD2, and PD3.

¹See, e.g., the specification at page 33, lines 6-22.

Accordingly, Claims 2-4, 14, 18, and 22 are believed to be in compliance with all requirements under 35 U.S.C. §112, second paragraph.

With regard to the rejection of Claim 13 under 35 U.S.C. §103(a) as unpatentable over Ito, Ozaki, and Ueda, that rejection is respectfully traversed.

Amended Claim 13 recites, “at least one final-stage reflection mirror having a reflection surface which reflects a reflected light beam from a polygon mirror directly to the scanned surface of the image support.”

Page 4, line 17 of the outstanding Office Action cited reflecting mirror 5 of Ito as “at least one reflection mirror.” However, Ito describes a reflection mirror 5 arranged between the optical scanning system 3 and the optical correcting system 4.² Thus, reflecting mirror 5 of Ito does not reflect a reflected light beam from a polygon mirror *directly to the scanned surface of the image support*. Thus, it is respectfully submitted that Ito does not teach or suggest a “*final-stage* reflection mirror having a reflection surface which reflects a reflected light beam from a polygon mirror *directly to the scanned surface of the image support*” as recited in amended Claim 1.

Further, it is respectfully submitted that neither Ozaki nor Ueda teaches or suggests “at least one final-stage reflection mirror” as defined in amended Claim 1. Ozaki describes a reflection mirror 24 arranged between laser light source section S_{OU} and f θ lens 23.³ Ueda describes a half mirror 29 wherein a light beam from a polygon mirror 21 is passed through to the scanned surface 1a of an image support via a dust-proof glass 32.⁴ Only when the light beam from the polygon mirror 21 is incident on a given position on the half mirror 29 is light reflected to the CCD unit 22. Thus, neither Ozaki nor Ueda teach or suggest a “*final-stage* reflection mirror having a reflection surface which reflects a reflected light beam from a

²See Ito, Figure 1.

³See Ozaki, Figure 5.

⁴See Ueda, Figure 2a.

polygon mirror *directly to the scanned surface of the image support*” as defined in amended Claim 1.

Unlike the cited references, the optical scanner recited in amended Claim 1 can attain miniaturization of an optical writing device and an image forming device in which the optical scanner is provided. Generally, when the reflection of a reflected light beam from a polygon mirror is repeated, an error in the positional detection is increased. According to the invention recited in Claim 13, the final-stage reflection mirror is provided as a half mirror and the reflected light beam which is located near the scanned surface of an image support (photoconductor) is detected by using a photodetector. Thus, it is possible for the method recited in Claim 13 to carry out the positional detection and adjustment with good accuracy.

Consequently, as none of Ito, Ozaki, and Ueda teach or suggest “at least one final-stage reflection mirror” as defined in amended Claim 13, none of Ito, Ozaki, and Ueda teach or suggest “rotating said at least one *final-stage* reflection mirror around the second axis in order to attain uniformity of a scanning speed of the optical scanner in the main scanning direction” as recited in amended Claim 13. Therefore, Claim 13 (and Claims 15 and 17-19 dependent therefrom) is patentable over Ito, Ozaki, and Ueda.

Claim 14 recites “at least one final-stage reflection mirror having a reflection surface which reflects a reflected light beam from a polygon mirror directly to the scanned surface of the image support” and “rotating said at least one *final-stage* reflection mirror about the first supporting unit in a direction perpendicular to the reflection surface and changing a distance between the reflection surface and the image support surface in order to attain uniformity of a scanning speed of the optical scanner in the main scanning direction.” As noted above, none of Ito, Ozaki, and Ueda teach or suggest “at least one final-stage reflection mirror” as defined in amended Claim 14. Therefore, Claim 14 is patentable over Ito, Ozaki, and Ueda for at least the reasons described above with respect to Claim 13.

With regard to the rejection of Claims 1, 2, and 20-23 under 35 U.S.C. §103(a) as unpatentable over Ito, Ozaki, Ueda, and further in view of Takahashi, that rejection is respectfully traversed.

Amended Claims 1, 2, and 20-23 recite, “at least one final-stage reflection mirror having a reflection surface which reflects a reflected light beam from a polygon mirror directly to the scanned surface of the image support; ... wherein said at least one final-stage reflection mirror is a *half mirror*.”

As noted above, none of Ito, Ozaki, and Ueda teach or suggest such a “final-stage reflection mirror.” Further, it is respectfully submitted that Takahashi does not cure the deficiencies of Ito, Ozaki, and Ueda. Specifically, Takahashi describes a reflection mirror 20 that is **not** a half mirror.⁵ Therefore, Takahashi also does not teach or suggest “at least one final-stage reflection mirror” as defined in amended Claims 1, 2, and 20-23. Consequently, amended Claims 1, 2, and 20-23 (and Claims 3, 4, 6-8, 11, and 12 dependent therefrom) are patentable over Ito, Ozaki, Ueda, and further in view of Takahashi.

With regard to the rejection of Claims 11 and 12 as unpatentable over Ito, Ozaki, Ueda, and Takahashi in view of Murayama, it is noted that Claims 11 and 12 are dependent from Claim 1, and thus are believed to be patentable for the reasons discussed above. Further, it is respectfully submitted that Murayama does not cure any of the above-noted deficiencies of Ito, Ozaki, Ueda, and Takahashi. Accordingly, it is respectfully submitted that Claims 11 and 12 are patentable over Ito, Ozaki, Ueda, and Takahashi in view of Murayama.

⁵See Takahashi, Figure 4.

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Accordingly, the outstanding rejections are traversed and the pending claims are believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

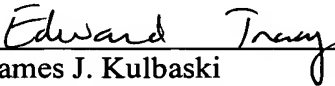
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